

Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) An electrochemical cell component comprising:

an electroconductive gas diffusion layer comprising a porous body comprising a plurality of pores, said gas diffusion layer having opposite first and second surfaces, said first surface of said gas diffusion layer abutting an electroconductive separator plate, said second surface of said gas diffusion layer abutting an electrode,

said electroconductive separator plate comprising at least one landing surface formed on the first [Fig. 3] surface of the electroconductive separator plate, and the electroconductive separator plate and landing surface comprising a thermoplastic polymer and conductive filler,

a plurality of welds spaced along the first surface of the electroconductive gas diffusion layer, wherein the first surface of the gas diffusion layer is joined to the separator plate by the welds, and the welds are formed by localized impregnation of some of the thermoplastic polymer of the landing surface within the pores of the porous body in a manner that the electrical contact between the conductive filler and the gas diffusion layer is maintained.

2. (Previously Presented) The electrochemical cell component of claim 1, wherein the surface of the electroconductive separator plate comprises landing surfaces separated by open flow field channels, and the welds are formed in between the channels.

3. (Cancelled)

4. (Previously presented) The electrochemical cell component of claim 1, wherein the thermoplastic polymer is selected from the group consisting of melt processible polymers, partially fluorinated polymers, thermoplastic elastomers, liquid crystalline polymers, polyolefins, polyamides, aromatic condensation polymers, and mixtures thereof.

5-11. (Cancelled)

12. (Previously presented) The electrochemical cell component of claim 1, wherein the thermoplastic polymer is a blend of maleic anhydride modified polymer, partially fluorinated polymers and liquid crystalline polymer, and wherein the maleic anhydride modified polymer comprises about 1 wt% to about 30 wt% of the thermoplastic polymer.

13. (Previously presented) The electrochemical cell component of claim 1, wherein the thermoplastic polymer is a blend of maleic anhydride modified polymer, partially fluorinated polymers and liquid crystalline polymer, and wherein the maleic anhydride modified polymer comprises about 5 wt% to about 25 wt% of the thermoplastic polymer.

14. (Previously presented) The electrochemical cell component of claim 1, wherein the conductive filler is graphite fiber and graphite powder.

15. (Previously presented) The electrochemical cell component of claim 1, further comprising a thermoplastic polymer rich layer on the top surface of the landing surface.

16. (Previously presented) The electrochemical cell component of claim 15, wherein the thermoplastic polymer rich layer comprises between about 25 wt% and about 100 wt% polymer.

17. (Previously presented) The electrochemical cell component of claim 16, wherein the thermoplastic polymer rich layer comprises between about 50 wt% and about 100 wt% polymer.

18. (Previously presented) The electrochemical cell component of claim 1, wherein the electrochemical cell component has a resistivity less than a resistivity of a system comprising a gas diffusion layer that is not welded to a plate.

19. (Previously presented) The electrochemical cell component of claim 2, wherein the gas diffusion layer does not sink into the open flow field channels of the electroconductive separator plate.

20. (Previously presented) An electrochemical cell comprising the cell component of claim 1.

21. (Previously presented) An electrochemical cell stack comprising a plurality of the electrochemical cells of claim 20.

22- 24. (Cancelled).